

KOLKER, I.Ya., inzh.; VEYTSMAN, M.I., kand.tekhn.nauk

Over-all mechanization of quarries along highways. Avt.dor. 23  
no.3:5-6 Mr 60. (MIRA 13:6)  
(Quarries and quarrying--Equipment and supplies)

RITOV, Maks Nikolayevich; VEYTSMAN, M.I., otv. za vypusk; YABLOKOV,  
V.I., red.; GALAKTIONOVA, Ye.N., tekhn.red.

[Methods of estimating the per shift cost of operation of  
road machinery] Metodika rascheta stoimosti mashino-smeny  
dorozhno-stroitel'nykh mashin. Izd.2., perer. i dop.  
Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp.  
i shosseinykh dorog RSFSR, 1959. 82 p. (MIRA 12:6)  
(Road machinery)

VEYTSMAN, M.I., inzh.

Automatic plants for making road concrete mixes. Mekh. trud. rab.  
12 no.2:30-33 F '58. (MIRA 11:3)  
(Concrete plants) (Automation)

AUTHOR: Veytsman, M.I., Engineer SOV/118-58-2-12/19

TITLE: Automated Plants for the Mixing of Concrete for Road Building  
(Avtomatizirovannyye zavody dlya prigotovleniya dorozhnykh betonov)

PERIODICAL: Mekhanizatsiya trudoyemkikh i tyazhelykh rabot, 1958, Nr 2, pp 30-33 (USSR)

ABSTRACT: As the Soviet machine building industry and its scientific research institutes (the VNIISTROYDORMASH and others) did not produce in time all parts necessary for the construction of the automated asphalt concrete plants equipped with the mixers D-152B, with a production capacity up to 200 tons per working shift, the plan of the reconstruction and automation of many plants of the Glavdorstroy SSSR (the USSR Glavdorstroy) has been postponed for another year. Other equipment of asphalt concrete plants still in use in the road-building industry does not meet requirements, either in construction or in output capacity. The author lists various road-building organizations which, by their own means, mechanized their plants and provided them with automated machines or with remote control systems. The asphalt concrete plants of the Upravleniye stroitel'stvom Nr 7, Glavdorstroy SSSR (the Administration of

Card 1/2

SOV/118-58-2.12/19

Automated Plants for the Mixing of Concrete for Road Building

Building Nr 7 of the Glavdorstroy of the USSR) were equipped with two or three modernized mixers G-1 which reduced the number of workers needed. The mixers, placed in one row, are operated by remote control (Figure 1). These modified mixers G-1 will be produced in 1958 by the Darnitskiy (Darnitsa) plant of the Glavdorstroy. Other asphalt concrete plants, either mechanized or automated, mentioned by the author are: the plant Nr 1 of the Lengorsovet and the Chernyakhov Plant of the Bashkirneftestroy. The Kremenchug Plant "Dormashina" is preparing a new assembly of equipment for an asphalt concrete plant D-333 (Figure 2) with the producing capacity of 50 tons/hr of mixture. The automated plant S-243 (Figure 3) in use for many years in the road-building industry is a very cumbersome and complicated construction, difficult to erect and has many construction and function defects. There are 4 diagrams.

1. Concrete--Preparation    2. Machines--Automation

Card 2/2

LEVITSKIY, M.I.

VEYTSMAN, M.I., kand. tekhn. nauk; LEVITSKIY, Ye.F., inzh.

Persistently improving mechanization of road construction. Avt. dor.  
21 no.1:2-6 Ja '58. (MIRA 11:1)

(Road construction)

SUDZHAYEV, I.A., insh.; VEYTSMAN, M.I., kand.tekhn.nauk

Heating aggregates at cement concrete plants during the winter  
months. Avt.dor. 21. no.11:15-16 H '58. (MIRA 11:12)  
(Concrete--Cold weather conditions)

VEYTSMAN, M.I.

ZABOLOTSKIY, Fedor Danilovich; ZHOLTOK, Adol'f Georgiyevich; VEYTSMAN, M.I.,  
redaktor; MAL'KOVA, N.V., tekhnicheskij redaktor

[Leading road graders; practices of the innovators M.F.Plotnikov  
and M.I.Matusevich] Peredovye avtogreideristy; iz opyta raboty  
novatorov M.F.Plotnikova i M.I.Matusevicha. Moskva, Nauchno-tekhn.  
izd-vo avtotransp.lit-ry, 1957. 33 p. (MLRA 10:8)  
(Road machinery)



BELICHENKO, D.M., kandidat tekhnicheskikh nauk; VEYTSMAN, M.I., kandidat tekhnicheskikh nauk.

Continuous construction of automobile highways in Altai Territory.  
Avt.dor.19 no.4:4-6 Ap '56. (MIRA 9:8)  
(Altai Territory--Road construction)

BUROV, Ivan Timofeyevich; VEYTSMAN, M.I., redaktor; MAL'KOVA, N.V.,  
tekhnicheskii redaktor

[P.L.Matskevich, operator of road graders] Avtogreiderist P.L.  
Matskevich. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1956.  
19 p. (MLRA 10:2)

(Road machinery) (Matskevich, P.L.)

VEYTSMAN, M.I., kandidat tekhnicheskikh nauk.

Advanced equipment for automobile roads. Stroi. i dor. mashinostr.  
1 no.12:13-15 D '56. (MIRA 10:1)

1. Glavdorstroy. (Road machinery)

VEYTSMAN, M.I., kandidat tekhnicheskikh nauk

Cooperation of science and industry. Avt.dor.18 no.5:32 S'55.  
(Highway research) (MIRA 9:1)

VEYTSMAN, N., prof.

Results of analytical work should be available to all. Bukhg. uchet  
15 no.4:5-11 Ap '58.

(MIRA 11:5)

(Accounting)

VEYTSMAN, N. professor.

Growth of profits of U.S. monopolies. Fin. SSSR 16 no.2:78-86  
F '55. (MLRA 8:1)  
(United States--Industries)

VEYTSMAN, N., prof.

What the financial statements of the U.S.A. monopolies reveal.  
Fin. SSSR 21 no.11:82-88 N '60; (MIRA 13:11)  
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zirovat' balans promyshlennogo predpriiatiia. Moskva, Gosfinizdat,  
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(Accounting)



VEYTSMAN, N.R., prof.; VENETSKIY, I.G., dots.; ZHUKOV, F.N., dots.;  
MUKHIN, A.F., dots.; YEPIFANOV, M.P., red.; YERKHOVA, Ye.A.,  
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[Principles of studying balance sheets and statistics] Osnovy  
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N.R.Veitsmana. Moskva, Izd-vo IMO, 1962. 261 p.  
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(Accounting)

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(MIRA 15:6)

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VEYTSMAN, N.R., professor; AGAPOVA, V.S., redaktor; VIGANT, Ya.Ya.,  
tekhnikheskiy redaktor

[Balance sheets of capitalist enterprises and their analysis]  
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(Financial statements)

VEYTSMAN, N.R.

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VEYTSMAN, NATAN RAKHMIL'YEVICH

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(Balance of socialist industrial enterprise and its analysis) Moskva,  
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Automatic control of a compressor station. Avtom. i prib. no.2:  
9-12 Ap-Je '63. (MIRA 18:8)

1. Ukrainskiy gosudarstvennyy proyektnyy institut stankostroitel'noy  
promyshlennosti.

VEYTSMAN, P.G.; MIKHAYIOV, V.P.

Automatic proportioning unit of components for an edge-runner  
mill. Avtom. 1 prib. no. 1:9-11 Ja-Mr '64. (MIRA 17:5)

VEYTSMAN, P.G., inzh.; MIKHAYLOV, V.P., inzh.

Automatic conveying of charge into the cupola furnace on an annular  
monorail. Mashinostroenie no.6:41-45 N-D '63. (MIRA 16:12)

VEYTSMAN, P.G.

Control circuit for a.c. arc furnaces. Mashinostroenie no.1:  
110-111 Ja-F '63. (MIRA 16:7)

(Electric furnaces)  
(Electronic control)



GAYNANOV, A.G.; TULINA, Yu.V.; KOSMINSKAYA, I.F.; ZVREY, S.M.; VEYTSMAN,  
P.S.; SOLOV'YEV, O.N.

Complex interpretation of the materials on geophysical  
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of the Pacific Ocean. Seism. issl. no.6:60-65 '65.

(MIRA 18:9)

PA 66T62

VEYTSMAN, P. S.

May/June 1948

USSR/Geophysics  
Seismology

"Maintenance of the Principle of Reciprocity in  
Seismology," P. S. Veytsman, Geophys Inst, Acad  
Sci USSR, 6½ pp

"Iz Ak Nauk SSSR, Ser Geograf i Geofiz" Vol XII,  
No 3 - pp. 231-8

Subject principle is common one used in physics.  
Better defines and generalizes theory used in seis-  
mic surveys up to now. Describes field experiments  
showing that real geologic medium is well adapted  
for calculations using the principle of reciprocity.  
Submitted by Academician O. Yu. Shmidt 6 Jul 1947.  
66T62

VEYTSMAN, P. S.

PA 237T48

USSR/Geophysics - Seismographs

Nov/Dec 52

"Selection of Distances Between Seismographs During Grouping With the Aim of Decreasing Background Interference," P.S. Veytsman, Geophys Inst, Acad Sci USSR

"Iz Ak Nauk SSSR, Ser Geofiz" No 6, pp 48-54

Considers problem of increasing sensitivity of apparatus in presence of microseisms generated by winds. Recommends distances be selected according to criterion governing loss of phase correlation on microseismograms by separate selections of groups.

237T48

GAMBURTSEV, G.A., akademik [deceased]; VETTSMAN, P.S., TULINA, Yu.V.

Structure of the earth's crust in the northern Tien Shan region,  
as shown by seismic depth sounding. Dokl. AN SSSR 105 no.1:  
83-86 N '55. (MIRA 9:3)

(Tien shan--Seismometry)

VEYTSMAN, P.S.

GAMBURTSEV, G.A., [deceased]; VEYTSMAN, P.S.

Contrast of data obtained by deep seismic sounding with  
seismological and gravimetric data concerning the structure of  
earth's crust in northern Tien Shan. Izv.AN SSSR, Ser.geofiz.  
no.9:1036-1043 S '56. (MLBA 9:12)

1. Akademiya nauk SSSR, Geofizicheskiy institut.  
(Tien Shan--Prospecting--Geophysical methods)

VEYTSMAN, P. S.

(Moscow)

"A Study of Seismic Deep Sounding of the Earth Crust in High Peaks of Central Asia."

paper presented (by V. Riznichenko) at 1st Seismological Conference of the Geophysics Inst, Czechoslovakian Acad. Sci., Liblice, 22 March 1957.

Bergakademie (Berlin) No. 4, 1957.

VEYTSMAN, P.S.

BALAKINA, L. M.

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PHASE I BOOK EXPLOITATION

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Abadaniya nezh SSSR. Komitet po geodesii i geofizike.

Tezisy dokladov na XI General'noy assambleye Mezhnatsionalnogo geodesicheskogo i geofizicheskogo soyuzov. Mezhnatsionalnaya assotsiatsiya seymologov i fiziki pod zemlei (Abstracts of Reports Submitted to the XI General Assembly of the International Union of Geodesy and Geophysics. The International Association of Seismology and Physics of the Earth's Interior) Moscow, 1977. 108 p. /Parallel texts in Russian and English/ 1,500 copies printed.

No additional contributors mentioned

PURPOSE: This booklet is intended for geophysicists, especially those specializing in seismology.

COVERAGE: This collection of articles deals with the structure and composition of the Earth and phenomena related thereto. The majority of the articles concern studies of earthquakes and seismic waves. Other articles cover the structure of the Earth's crust and mountain roots; the elastic properties of rocks at high pressures; the piezoelectric effect of rocks and the method of modelling in tectonophysics. The collection also contains articles on the Earth's thermal history, the microseismic method of tracing stresses and strains.

Volarovich, N.F. and N.I. Yurishenko. Piezoelectric Effect of Rocks	29
Jurishenko, N.I., F. Kozminskaya, and Yu. V. Kizichenko. New Evidence on the Structure of the Earth's Crust and Mountain Roots in Central Asia From Seismic Depth Sounding Data	31
Geovakli, N.V. Method of Modelling in Tectonophysics	37
Gorshkov, G.F. Seismic Intensity Regions of Asia	44
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GAMBURTSEV, G.A. [deceased]; VEYTSMAN, P.S.; DAVYDOVA, N.I.; TULINA, Yu.V.

Plutonic seismic sounding of the Earth's crust in northern Tien  
Shan. Biul. Sov. po seism. no.3:11:23 '57. (MIRA 11:5)  
(Tien Shan--Seismic waves)



GAMBURTSEV, G.A. [deceased]; VEYTSMAN, P.S.

Characteristics of the structure of the Earth's core in the northern regions of Tien Shan according to data of plutonic seismic sounding and comparison of these with geological, seismological and gravimetric data. Biul. Sov. po seism. no.3:24-27 '57. (MIRA 11:5)  
(Tien Shan--Seismic waves)

VEYTSMAN, P.S.; GAL'PERIN, Ye.I.

~~Studies on the structure of the Earth's crust on the territory~~  
Studies on the structure of the Earth's crust on the territory  
between the Asiatic continent and the Pacific Ocean. Mezhdunar.  
geofiz. god no.3:76-82 '57. (MIRA 11:5)  
(Sakhalin region--Earth--Surface)  
(Kurile Islands--Earth--Surface)

VEYTSMAN, P.S.

AUTHOR: Savarenskiy, Ye. F.

49-4-23/23

TITLE: First seismological conference of the Czechoslovak Ac.Sc.  
(O pervoy seysmologicheskoy konferentsii Chekhoslovatskoy Akademii Nauk).

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya,  
1957, No.4, pp.558-559 (USSR)

ABSTRACT: This conference was held between March 18 and 22, 1957 in Liblice, the aim of which was to acquaint seismologists of various countries with results of studies of seismicity, determination of the intensity of earthquakes, study of the structure of the Earth's crust, investigation of the propagation of seismic waves and design of apparatus. In addition to Czech seismologists, there were three seismologists from Hungary, three from Eastern Germany, two from Poland, one from Roumania and five from the Soviet Union. The conference was also attended by the General Secretary of the International Association of Seismology and Physics of Mineral Resources, Prof. Rothe of France. A total of thirty papers were read. Soviet delegates read the following papers:  
1. Yu. V. Riznichenko "Study of the structure of the Earth's crust in the U.S.S. by the method of deep seismic sounding";

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VEYTSMAN, P.S.

AUTHOR: Veytsman, P.S.

49-12-2/16

TITLE: Correlation of Seismic Waves During Deep Sounding of the Earth's Crust (Korrelatsiya seysmicheskikh voln pri glubinnom seysmicheskom zondirovanii zemnoy kory)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1957, no.12, pp. 1438 - 1452 + 4 plates (USSR).

ABSTRACT: The problem is considered of correlating observation of of seismic waves and groups of waves recorded during deep seismic sounding of the Earth's crust. The seismographic recordings show groups of waves which are interconnected with the fundamental deep seismic boundaries in the Earth's crust. The waves of various groups are distinguished by a number of stable kinematic and dynamic characteristics, and on the basis of analysis of these characteristics criteria are formulated for separating and identifying groups of waves recorded on generalised profiles. <sup>here</sup> The given principles of group correlation permit simultaneous interpretation of seismic recordings obtained on the systems of profiles located at distances hundreds of kilometres from the explosion point with distances between profiles of several tens of kilometres.

The method of deep seismic sounding is based on utilising Card1/7 the refracted (main) longitudinal waves and therefore, in this

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Correlation of Seismic Waves During Deep Sounding of the Earth's crust.

paper, the author deals only with waves of this type. Utilisation of refracted waves for deep seismic sounding involves considerable difficulties. The problem of the possibility of separation and correlation of the observations, effected over large distances, of seismic waves and groups of waves recorded in deep seismic sounding is of cardinal importance for utilising the here mentioned method. The author considers this problem on the basis of analysis of seismic recordings obtained in Northern Tyan'-Shan in 1949, 1950 and 1953, and of certain material obtained in South-western Turkmenia in 1952 [Ref.19], where the work was carried out jointly with "Sredazneftegeofizika". (U.V. Tulina participated in the interpretation and evaluation of the seismic data used for writing this paper). In the field work, special apparatus was used [Ref.15], of a design similar to that used in prospecting work, but distinguished by a higher sensitivity and a specially selected lower frequency characteristic. The maximum sensitivity of the apparatus is in the frequency range 6 - 14 c.p.s., - as compared with 20 - 40 c.p.s. for apparatus intended for medium-depth prospecting [Ref.2] and 1 - 2 c.p.s. for apparatus used in regional seismic stations. Explosions were effected at depths of 20 - 40 m in natural water

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Correlation of Seismic Waves During Deep Sounding of the Earth's Crust.

reservoirs, preferably during the night and in the absence of wind. In the apparatus, amplifications of up to 300 - 400 thousand were used with maximum amplification of the order of 750 000. For improving the effective sensitivity, the seismographs were grouped [Refs. 15, 20]. For obtaining recordings of the longitudinal, refracted main waves, which correspond to the deep division boundaries of the Earth's crust, systems of radial, sectionally-continuous, longitudinal profiles were used; the length of the continuous profiles varied between 1 - 40 km, with intervals of 20 km and more, and were determined by the topographic conditions of the locality, the presence of inhabited points, which disturbed investigations, and a number of other conditions. It was found that the length of the continuous profiles must be at least 4 - 5 km if sufficiently reliable values of the apparent speeds are to be obtained. The distance between individual instruments or groups of instruments was 100 - 300 m and ensured good phase correlation of the waves. The sectionally-continuous profiles permit simultaneous interpretation of the main groups of waves recorded at larger ranges of distances from the point of explosion, of up to hundreds of kilometres. Fig. 1 shows the seismograms obtained at 166.0 to

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161.6 km from the point of explosion; the recordings show three types of waves, the first,  $P^0$ , corresponding to granite layer, the second,  $P^*$ , to the basalt layer and the third,  $P$ , to the underneath layer; the phase hodograph of the entire profiles is given in Fig.5. Fig.2 gives the seismograms for a part of the profiles at distances of 149 to 158 km from the point of explosion; the phase hodograph of the entire profile is given in Fig.6. Fig. 3 gives the seismograms for the profile located at 259.8 to 270.6 km from the point of explosion; the phase hodograph is given in Fig.7; Fig.4 gives the seismogram obtained for a distance of 366 km, showing a good time separation of the waves of the  $P$  and  $P^*$  group. Fig.8 shows an example of a complex correlation picture corresponding to a fracture zone which comprises a basalt layer. In para. 4, the characteristics of the main groups of waves are outlined; para. 5 deals with group correlation; Fig.14 gives the system of group hodographs constructed for one of the directions in the Northern Tyan'-Shan and, by using the time field method [Ref.28], a cross-section was worked out of the Earth's crust in the investigated region and the limit speeds of the main waves were determined [Refs.14 and 16-18]. Fig.15 contains the hodograph of waves sliding along

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Correlation of Seismic Waves During Deep Sounding of the Earth's Crust.

the division boundaries from which the degree of accuracy can be evaluated of the determined average limit speed. In para. 6, the criteria of detecting and of identifying the basic groups of waves are discussed, dealing with kinematic criteria as well as dynamic criteria. In the concluding part of the paper, it is stated that in the deep seismic sounding seismographs, a large quantity of regular, longitudinal waves was observed; recordings show clearly groups of waves within the limits of which most of the waves have similar kinematic and dynamic characteristics, which are maintained on moving away from the point of explosion; these characteristics differ for the waves of the various groups. Comparison with seismological data both as regards absolute times and as regards the values  $V_*$  and  $V_*$  indicate that the fundamental groups of waves on the recordings of  $P^0$ ,  $P^*$  and  $P$  correspond to the same layers of the Earth's crust as the waves  $\bar{P}$ ,  $P^*$  and  $P$  in recordings of earthquakes. The difference consists only in that the wave  $\bar{P}$  is always that which goes through into the granite layer and  $P^0$  is the main refracted wave, corresponding to the surface of this layer or the boundaries inside it. The first waves of the groups  $P^*$  and  $P$  are one-time longitudinal, main waves corresponding to the basalt

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Correlation of Seismic Waves During Deep Sounding of the Earth's Crust. 49-12-2/16

surface (P\*) and to the surface of Mokhorovichich (P); these waves are utilised for quantitative evaluation. The nature of the subsequent waves in the groups will be a subject of further study. Experience relating to deep seismic sounding by the method of refracted waves has shown that it is possible to utilise sectionally-continuous, longitudinal profiles consisting of separate continuous profiles; within the limits of continuous profiles, the correlation ability of the waves according to phases is elucidated and the dynamic features are studied of waves and wave groups. On the basis of analysis of kinematic and dynamic features of the seismic recordings at various distances from the point of explosion, criteria are formulated for separating and identifying groups of waves which are recorded on the separate profiles, i.e. for carrying out group correlation. The principles of group correlation, which are the foundation of interpreting any deep seismic sounding, permit simultaneous evaluation of data obtained on profile systems which are not associated with a continuous correlation and are distributed within the limits of several hundreds of kilometres from the point of explosion for profile distances amounting to

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Correlation of Seismic Waves During Deep Sounding of the Earth's Crust. <sup>49-12-2/16</sup>

tens of kilometres. Experience obtained relating to deep seismic sounding has shown that the foundations of the interpretation technique, developed primarily for the Tyan'-Shan conditions, are also applicable in other regions with a differing structure; as an example, the work effected in 1952 in the region of South-west Turkmenia [Ref.19] and in 1955 in the Pamir mountain range is mentioned. There are 15 figures and 29 references, 25 of which are Slavic.

ASSOCIATION: Institute of Physics of the Earth Ac.Sc. USSR  
(AN SSSR Institut Fiziki Zemli)

SUBMITTED: January 28, 1957.

AVAILABLE: Library of Congress

Card 7/7

AUTHOR: VEYLSMAY, P. S.

AUTHOR: ~~Veytsman, P. S.~~  
TITLE: Seismic depth sounding and the study of the structure of the Earth's crust in the USSR.  
Moscow. Izd-vo

crust in the USSR.

SOURCE: From the collection "The Earth in the universe". Moscow, Izd-vo Mysl', 1964, p. 10.

[illegible]

ABSTRACT: This is a report of a colloquium on the problems of seismic depth sounding, held at the Institut fiziki Zemli AN SSSR (Terrestrial physics institute, AN SSSR) on Nov. 14-19, 1960 under the auspices of the Institute, Geofizicheskiy otdel (Geophysics department) of the Sovet razvedochnoy geofiziki pri Prezidiume Akademii nauk SSSR (Geophysical prospecting council, Presidium of the Academy of sciences, SSSR), and the Vsesoyuznyy institut geofizicheskikh metodov razvedki Ministerstva geologii i okhrany nedr SSSR (All-union geophysical prospecting methods institute, Ministry of geology and mineral conservation, SSSR). The meetings were attended by 190 people, who were dealing with 3

ACCESSION NR: AID 7417

the SSSR call for "super deep" drilling with a view to  
and that of the upper part of the earth's mantle. The following reconnaissance  
sedimentary rock to the gran-

VEYTSMAN, P.S. [translator]; VILLER, K.E. [translator]; KROPOTKIN,  
P.N., red.; SAVARENSKIY, Ye.F., red.; YAKOVENKO, M.Ye., red.;  
GRIBOVA, M.P., tekhn.red.

[Crustal structure, based on seismic data; collected studies]  
Stroenie zemnoi kory po seismicheskim dannym; sbornik statei.  
Moskva, Izd-vo inostr.lit-ry, 1959. 362 p. Translated from  
the English. (MIRA 13:6)  
(Geology) (Seismic prospecting)

S/169/61/000/012/001/089  
D228/D305

AUTHOR:

~~Veytsman, P. S., Gal'perin, Ye. I., Zverev,  
S. M., Kosminskaya, I. P., and Krakshina, R. M.~~

TITLE:

Some data on the structure of the crust in the  
transitional zone from the Asiatic Continent to  
the Pacific Ocean

PERIODICAL:

Referativnyy zhurnal, Geofizika, no. 12, 1961,  
5, abstract 12A34 (V sb. Geol. rezultaty prikl.  
geokhimii i geofiz. Razdel 2. M., Gosgeol-  
tekhizdat, 1960, 37-42)

TEXT: Complex geophysical research was carried out on the  
structure of the crust in the transitional zone from the Asiatic  
Continent to the Pacific Ocean. The complex of methods included  
seismic surveying, aeromagnetic surveying, and gravimetry. Geo-  
logic investigations were also made in coastal districts. It  
was possible from the processing of preliminary data to expose

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Card 2/

22423

3.6000

S/049/61/000/002/001/012  
D242/D301

AUTHORS: Aver'yanov, A. G., Veytsman, P. S., Gal'perin, Ye. I.,  
Zverev, S. M., Zayonchkovskiy, M. A., Kosminskaya,  
I. P., Krakshina, R. M., Mikhota, G. G., and Tulina,  
Yu. V.

TITLE: Deep seismic sounding in the transitional zone between  
the continent of Asia and the Pacific Ocean during  
the International Geophysical Year

PERIODICAL: Akademiya nauk SSSR. Seriya geofizicheskaya.  
Izvestiya, no 2, 1961, 169-184

TEXT: As part of the IGY program scientists of the Institut  
fiziki zemli AN SSSR (Institute of Physics of the Earth AS USSR),  
the Vsesoyuznyy nauchno-issledovatel'skiy institut geofiziki  
Ministerstva geologii i okhrany nedr SSSR (All-Union Scientific-  
Research of the Ministry of Geology and Mineral Resources of the  
USSR) and other organizations investigated the crustal structure  
of the Okhotsk Sea by means of deep seismic sounding. The area

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S/049/61/000/002/001/012  
D242/D301

Deep seismic sounding...

was chosen since very little is known of the nature of the crust in such transitional zones between continents and oceans. It is separated from the Pacific by the Kurile Island Arc which is bordered by a deep ocean containing seismologically active zones with deep foci and large positive gravity anomalies. The main observations were undertaken along profiles with lengths of about 8000 km, orientated transversely to the supposed structures of the study area, as described by Ye. I. Gal'perin, A. V. Goryachev and S. M. Zverev (Ref. 1: Issledovaniye zemnoy kory v oblasti perekhoda ot Aziatskogo kontinenta k Tikhomu okeany (Investigation of the Crust in the Area of Transition between the Continent of Asia and the Pacific Ocean) Sb. XII razdel programmy MGG (seysmologiya), No. 1. Izd. AN SSSR, 1958) and by V. G. Vasil'yev et al (Ref. 2: Issledovaniye zemnoy kory v oblasti perekhoda ot Aziatskogo kontinenta k Tikhomu okeany (Investigation of the Crust in the Area of Transition between the Continent of Asia and the Pacific Ocean) Sb. "Seysmicheskiye issledovaniya v period MGG"

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D242/D301

Deep seismic sounding...

No. 4, Izd. AN SSSR, 1960). The area near Iturup Island was also investigated on a special grid. The data was collected by the method of movable explosion points with single-point recording at fixed stations; the details are given by Ye. I. Gal'perin and I. P. Kosminskaya (Ref. 3: Osobennosti metodiki glubinnogo seysmicheskogo zondirovaniya na more (Features of the Method of Deep Seismic Sounding at Sea) Izv. AN SSSR, Ser. geofiz., No. 7, 1958). Use was also made of the results of experiments conducted by G. A. Gamburtsev (Ref. 6: O glubinnom seysmicheskom zondirovanii zemnoy kory i nekotorykh drugikh prilozheniyakh metodom vysokochuvstvitel'noy zapisi seysmicheskikh kolebaniy (The Deep Seismic Sounding of the Crust and some other Applications by the Method of Highly Sensitive Recording of Seismic Oscillations) Izbr. tr., Izd. Akad. Nauk SSSR, 1960.) and P. S. Veytsman (Ref. 7: O rezultatakh rabot po glubinnomu seysmicheskomu zondirovaniyu zemnoy kory v odnom iz gornyykh rayonov Sredney Azii (Results of the Deep Seismic Sounding of the Crust in a Mountainous District of Central

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X

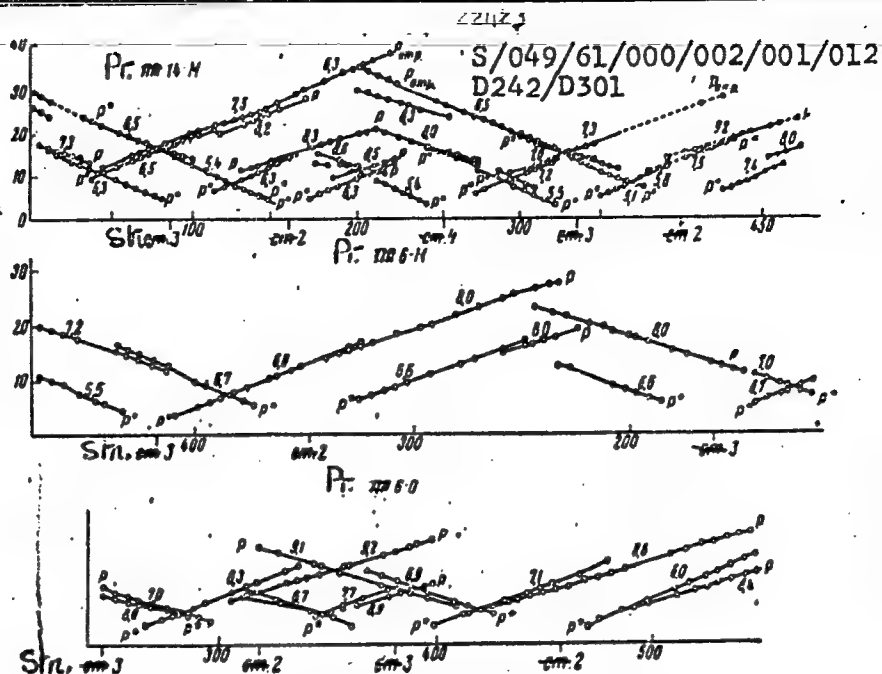
Deep seismic sounding...

Asia) Stud, Geophys. et Geodaet., No. 2, 1958) in continental areas of the Soviet Union. In contrast to foreign practice, it was possible by employing several recording stations on the line of observation to obtain the types of time-travel curves shown in Fig. 2 during a single boat journey. Wave recordings were also made on the explosion vessel. The bottom of reflections provided information on the depth of water and the structure of bottom sediments in accordance with the procedure mentioned by S. M. Zverev (Ref. 10: O stroenii osadochnoy tolshchi nekotorykh uchastkov Tikhogo okeana po dannym seysmicheskikh otrazhennykh voln (Structure of the Sediment Layer of Certain Parts of the Pacific Ocean from the Data of Reflected Seismic Waves) Izv. AN SSSR, ser. geol., No. 2, 1960). The explosions of charges weighing about 100 kg were recorded on a low-frequency seismic device with a filtration range of 0.7 - 15 hertz at distances of up to 200 - 250 km on the sea and 100 - 150 km on the ocean. The receivers consisted of hydrophones with cascade intensification.

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Deep seismic sounding...

Fig. 1.  
Examples of  
hodograph  
systems ob-  
tained in the  
Okhotsk Sea  
(14-M, 6-M)  
and Pacific  
Ocean (6-0)



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Фиг. 2. Примеры систем годографов, полученных в Охотском море (14-M, 6-M) и Тихом океане (6-0)

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D242/D301

Deep seismic sounding...

The waves were separated and correlated by recording their intensity simultaneously with the construction of the hodographs which were set out in such a way that the coordinate origin corresponded to the position of the recording station, the time of wave-arrival being plotted over the positions of the explosion sites. Despite the complexity of the recordings, especially in island and littoral areas, several types of waves related to crustal discontinuities, bottom sediments and the water layer were distinguished on the seismograms, including refracted longitudinal waves associated with boundaries in the sediment layer ( $P_{sed}$ ) and the actual crust ( $P^0$  and  $P^*$ ) and with the Mohorovicic discontinuity at the base of the crust. Waves of the first type have speeds of 5 km/sec and were observed near the Kuriles and on most sea profiles. The velocities of the  $P^0$  and  $P^*$  waves mainly recorded in island areas and near Kamchatka are 6 and 6.5 - 7 km/sec respectively. The leading P waves refracted from the Mohorovicic discontinuity

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Deep seismic sounding...

travel at speeds of about 8.5 km/sec. Waves ( $P_R$ ) reflected from the Mohorovicic and other discontinuities were also noted in addition to the refracted waves, although it was only possible to distinguish them with any clarity in certain regions - mainly the northern and central parts of the Okhotsk Sea, where their amplitude is greater than that of the other wave-types. Analysis of the hodographs discloses the existence of three main wave-types defined by differences in the arrival and transit time of the waves, by the areas where they were recorded and by the presence or absence of the  $P^0$  and  $P^*$  groups (Fig. 9). By plotting the values for the relationship of the mean velocity  $v$  to the depth  $h$ , three types of velocity curves corresponding to continental-, intermediate- and oceanic-type hodographs were also obtained. Continental-type hodographs are characteristic of large areas in the northern and central parts of the Okhotsk Sea and in the northern Kuriles, where work by P. S. Veytsman et al (Ref. 11: Nekotoryye rezul'taty izucheniya stroyeniya zemnoy kory v oblasti

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S/049/61/000/002/001/012  
D242/D301

Deep seismic sounding...

Kuril'skoy ostrovnoy dugi i privileyushchikh uchastkov Tikhogo okeana podannym glubinnogo seysmicheskogo zondirovaniya (Some Results of the Study of Crustal Structure in the Kurile Island Arc and Adjoining Parts of the Pacific Ocean from the Data of Deep Seismic Sounding) Izv. AN SSSR, ser. geol., No. 1, 1961) has already indicated that the crust is of the continental type. In the continental-type hodographs the arrival times of the P<sub>0</sub>, P\* and P waves are at a maximum, the transit time of the P waves being 18 - 19 sec. There are two forms of hodograph; one represents a three-layer crust (sediments - 'granite' - 'basalt') for the region near Kamchatka and Sakhalin, while the other corresponds to a granite crust (with local basalt layers) in the north of the Okhotsk Sea. According to the velocity-depth curves the continental-type crust, whose thickness throughout the study area may vary from 20 to 30 km, includes thick or thin sedimentary layers. Oceanic-type hodographs cover areas approximately outlined by the 5 km isobath. The arrival time of the P\* and P waves

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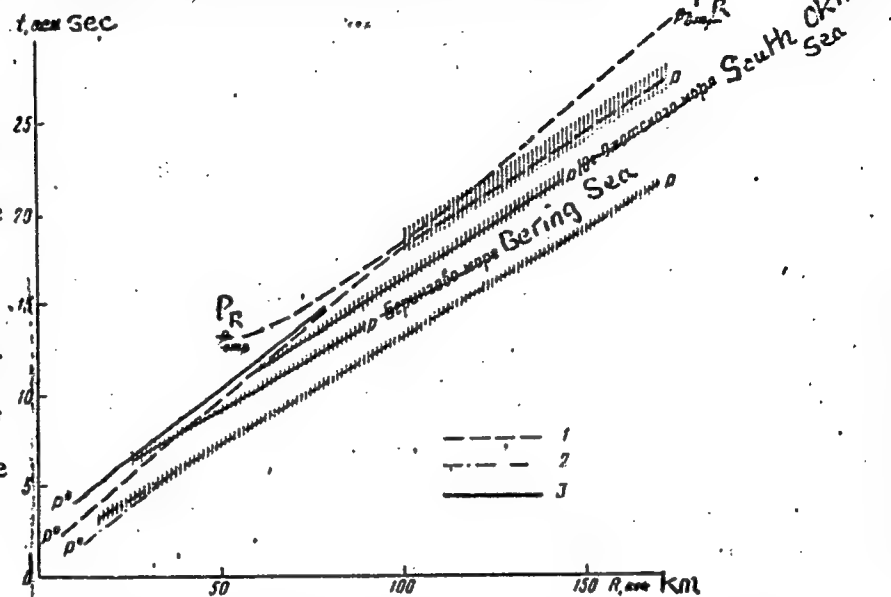
Deep seismic sounding...

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D242/D301

Fig. 9.  
Principal  
hodograph  
types.  
1-continental  
2-oceanic  
3-intermediate  
striations  
denote areas  
where there  
are different  
types of hodo-  
graph waves;  
Type 3 charac-  
terizes hodo-  
graphs for the  
Bering and  
Okhotsk Seas

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D242/D301

Deep seismic sounding...

is at a minimum and the transit time for the latter waves is  $\leq 14$  sec. The presence of a thin basalt crust with a thickness of about 5 - 12 km may be inferred from the observational data. The intermediate-type hodographs are representative of the southern part of the Okhotsk Sea and the neighborhood of the Komandorskiye Islands. They are distinguished by the existence of  $P^*$  and P waves and by the large area in which waves of the first type were recorded; the transit time of the P waves is 15 - 17 sec. The velocity-depth curves resemble those for the continental-type crust in abyssal parts of the Okhotsk Sea, where the sediment thickness appears to be considerable, and those for the oceanic-type crust in the Bering Sea. The authors conclude by stating that a composite interpretation of the data of deep seismic sounding and of gravimetric, aeromagnetic and geologic observations in this region will be made subsequently which may possibly expose the patterns of development of crustal structure and also clarify the conditions and sequence of transition from one type

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D242/D301

Deep seismic sounding...

of crustal structure to another. In addition, they emphasize the desirability of comparing their data with those from other global zones. There are 13 figures and 12 references: 10 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: R. W. Reitt - Seismic-refraction studies of the Pacific Ocean Basin, p. 1. Crustal thickness of the central equatorial Pacific, Bull. Geol. Soc. Amer., 67, No. 12, 1956; M. Talwani, G. H. Sutton and J. L. Worzel - A crustal section across the Puerto Rico Trench, J. Geophys. Res., 64, No. 10, 1959.

ASSOCIATION: Akademiya nauk SSSR, institut fiziki zemli (Institute of Physics of the Earth, AS USSR)

SUBMITTED: July 24, 1960

Card 11/11

VEYTSMAN, P.S.; GAL'PERIN, Ye.I.; ZVEREV, S.M.; KOSMINSKAYA, I.P.; KRAKSHINA, R.M.; MIKHOTA, G.G.; TULINA, Yu.V.

Some results of studying the earth's crust in the arc of the Kurile Islands and adjoining parts of the Pacific according to deep-seismic sounding data. Izv.AN SSSR. Ser.geol. 26 no.1:81-86 Ja '61.  
(MIRA 15:6)

1. Institut fiziki Zemli AN SSSR, Moskva.  
(Kurile Islands--Earth surface)  
(Kurile Islands--Seismic prospecting)

PAVLOVA, A.I. Prinimali uchastiye: LYUSTIKH, Ye.N., nauchnyy sotr.,  
kand. fiz.-mat. nauk; VEYTSMAN, P.S., nauchnyy sotr.; NIKOLAYEVA,  
L.K., red. izd-va; SUSHKOVA, L.A., tekhn. red.

[Structure of the crust and the upper part of the earth's mantle  
according to geophysical data; biographical index, 1937-1961]  
Stroenie kory i verkhnei chasti mantii Zemli po geofizicheskim dan-  
nym; bibliograficheskii ukazatel', 1937-1961. Moskva, Izd-vo Akad.  
nauk SSSR, 1962. 92 p. (MIRA 15:6)

1. Akademiya nauk SSSR. Institut fiziki Zemli. Biblioteka. 2. In-  
stitut fiziki Zemli Akademii nauk SSSR (for Veytsman, Lyustikh)  
(Bibliography—Earth—Surface)

AM... 5 30  
Akademiya nauk SSSR. Institut fiziko-khimicheskoy teorii  
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Marshall, S. ... ..  
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AM4.04525:

essentially parts of one book. The authors express their gratitude to Professor V. V. Fedynskiy, Chairman of the Department of Geophysics of the USSR Academy of Sciences, initiator and organizer of complex geophysical research, and also to Corresponding Member of the USSR Academy of Sciences, Professor A. A. Gurburtsev.

Introduction (G. A. Gurburtsev) - - 3

Ch. 1. Brief information concerning the research methodology and apparatus (Ye. I. Gal'perin) - - 7

Ch. 2. Dividing the region for investigation into zones according to types of seismic material (I. P. Korminskaya) - - 11

Ch. 3. Special kinematic characterization of multiple waves connected with deep discontinuities (Ye. I. Gal'perin) - - 15

Ch. 4. Dynamic characteristics of the Earth's crust (I. P. Korminskaya) - - 19

L 31816-65  
AM4045250

6

Results of studying a sedimentary stratum in the Sea of Okhotsk and the

1. Results of studying a sedimentary stratum in the Sea of Okhotsk and the  
2. General features of the stratum in the Pacific crust in the subduction  
3. Conclusions - 274  
Initial treatment of sediments - Appendix - 274

L 21427-66 ENT(1)/ECC/EWA(h) GW

SOURCE CODE: UR/3195/65/000/006/0060/0065

ACC NR: AT6010298

AUTHOR: Gaynanov, A. G.; Tulina, Yu. V.; Kosminakaya, I. P.; Zverev, S. M.;  
Veytsman, P. S.; Solov'yev, O. N.

ORG: none

TITLE: Comprehensive interpretation of data from geophysical observations in the  
Sea of Okhotsk and the Kurile-Kamchatka zone of the Pacific Ocean

SOURCE: AN SSSR. Mezhdunarodnyy geofizicheskiy komitet. Seismicheskiye  
issledovaniya, no. 6, 1965, 60-65

TOPIC TAGS: seismology, gravimetry, geomagnetism, deep seismic sounding, geophysical  
anomaly, transition zone

ABSTRACT: Data on the earth's crust<sup>44.55</sup> acquired during the IGY<sup>12</sup> from geological and  
geophysical studies (by magnetic, gravimetric, and seismic methods) in the transi-  
tional zone between Asia and the Pacific Ocean were used to investigate two problems:  
1) qualitative comparison of special features of anomalous gravitational and magnetic  
fields with structures of the earth's crust determined by seismic data (deep seismic  
sounding); and 2) some results from a quantitative comparison of gravitational and  
magnetic anomalies with deep seismic-sounding data. A map of magnetic anomalies  
shows moderate isometric anomalies in the Sea of Okhotsk and pronounced anomalies  
in narrow belts in the Sea of Okhotsk, along the Kurile-Kamchatka ridge and adjacent

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L 21427-66

ACC NR: AT6010298

parts of the Pacific, and near the Komandorskiye Islands. The sources of magnetic anomalies in the North Okhotsk and Sakhalin depressions seem to be confined to the uppermost or lowermost portions of the "granitic" layer and the upper part of the "basaltic" layer. In areas in the Pacific off the Kurile Islands, the anomalies are in the uppermost part of the mantle, and east of the deep offshore trench, they are in the upper mantle and the "basaltic" layer. It can be assumed that these magnetic anomalies are caused by processes associated with the formation of discontinuities and lava intrusions from the upper mantle onto the ocean floor. Comparisons of the anomalous gravitational field with deep seismic-sounding data showed that the principal features of the field coincide with the structures in the crust indicated by the sounding data thus making it possible to identify regions of anomalous density. [FO]  
Orig. art. has: 4 figures.

SUB CODE: 08/ SUBM DATE: none/ ATD PRESS: 4221

Card

2/2



L 3942-66 EWT(1)  
ACCESSION NR: AP5025075

AUTHOR: Veytsman, P. S.  
44,55

UR/0387/65/000/009/0013/0030  
550.311(265.2/265.3)

36  
33  
B

TITLE: Special features of the abyssal structure of the Kurile-Kamchatka zone

SOURCE: AN SSSR. Izvestiya. Fizika Zemli, no. 9, 1965, 13-30

TOPIC TAGS: deep seismic sounding, earth crust thickness, Moho discontinuity,  
gravity field, magnetic field, seismic profile 12,44,55

ABSTRACT: The abyssal structure of the Kurile-Kamchatka zone of transition between the Asiatic mainland and the Pacific Ocean has been investigated by deep seismic sounding methods. The results are compared with special features of the gravitational and magnetic fields as well as with data on recent vertical movements of the crust, vulcanism, and seismicity. The profiles along which this work was carried out and the various cross sections determined are graphically presented in the original article. Comparisons of the relationships between the depth of the Mohorovicic discontinuity (total thickness of the crust  $H_M$ ) and the relief of the bottom (depth of the water

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L 3942-66

ACCESSION NR: AP5025075

layer h) are made for a number of deep seismic sounding profiles. Orig. art. has: 3  
8 figures. [EO]

ASSOCIATION: Institut fiziki Zemli, Akademiya nauk SSSR (Institute of the Physics  
of the Earth, Academy of Sciences, SSSR) 44,55

SUBMITTED: 05Sep65

ENCL: 00

SUB CODE: ES

NO REF SOV: 033

OTHER: 017

ATD PRESS: 7118

Card 2/2 DP

KOSMINSKAYA, I.P.; ZVEREV, S.M.; VEYISMAN, P.S.; TULINA, Yu.V.;  
KRAKSHINA, R.M.

Basic features of the structure of the earth's crust under the  
Sea of Okhotsk and the Kurile-Kamchatka zone of the Pacific Ocean,  
based on deep seismic sounding data; results of the IGY. Izv. AN  
SSSR. Ser.geofiz. no.1:20-41 Ja '63. (MIRA 16:2)

1. Institut fiziki Zemli AN SSSR.  
(Soviet Far East—Submarine geology) (Seismology)

S/011/61/000/001/001/001  
AO54/A133

AUTHORS: Veytsman, P.S.; Gal'perin, Ye.I.; Zverev, S.M.; Kosminskaya, I.  
P.; Krakshina, R.M.; Mikhota, G.G. and Tulina, Yu.V.

TITLE: Some results of studying the Earth's crust in the area of the Kuril  
Island arc and the adjoining areas of the Pacific Ocean based on  
deep seismic sounding data

PERIODICAL: Izvestiya Akademii Nauk, SSSR. Seriya geologicheskaya, no.1, 1961,  
81 - 86

TEXT: In 1957-58, Soviet geologists surveyed by deep seismic sounding the  
geology of the region between the Asiatic continent and the Pacific, the area of  
the Kuril Island arc and surrounding parts of the Pacific. These latter regions  
are particularly interesting, because in a rather narrow (300 - 400 km) zone the  
Earth's crust here shows great variations which can be classified in three main  
groups: 1) continental type crust, consisting of an upper sedimentary and two  
lower: a granite and a basalt layer. This zone is 20-30 km thick, the average  
velocity of longitudinal waves in this zone is not more than 6 km/sec. 2) The  
oceanic part of the crust consists of a thin sedimentary less than 1 km thick and

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S/011/61/000/001/001/001  
A054/A133

Some results of studying the Earth's crust ...

a 5 - 10 km thick basalt layer. The wave velocity in this zone (outside the sedimentary layer) is about 7 km/sec. 3) The intermediate zone has an intermediate character both as regards thickness and structure of its layers (in general the sedimentary-basalt structure prevails). The classification into these three groups was based on the time-distance curves of primary waves and the ratio of average speed  $v$  to depth  $h$ . The geological map of the surveyed area shows that the intricate alternation of these three types of crust-structure cannot be observed in the direction from the island to the ocean only but also along the entire area, from the Hokkaido Island to the Peninsula of Kamchatka. The most intricate crust-structure is found in the area between the island arc and the Kurile-Kamchatka deep trench. According to the crust-structure this area can also be divided into three parts: a) its northern part shows a continental, b) its southern part partly a continental, partly an intermediate character, while c) the central part also consists of two structures: one of an intermediate and one of an oceanic character and seems to be the continuation of the deep-water area of the Okhot Sea. In order to establish the changes in propagation velocity in the transition zone of one typical area of the crust into another, the average  $\bar{V}$ -values have been determined at a height of 7 km from the bottom. The comparison of the velocity curves with the relief of the bottom revealed a strict regularity in the relations: the oceanic

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Some results of studying the Earth's crust ...

S/011/61/000/001/001/001  
A054/A133

plateau corresponds to the highest average values of  $\bar{V}$ , which drop sharply in the direction from the oceanic plateau to the tabular zone, in northern and southern direction as well, in the area of the eastern slope of the deep trench. The lower values of  $\bar{V}$  in the tabular zone are connected with thick sedimentary layers, (near Kamchatka). The areas close to the central and the southern part of the arc display high  $\bar{V}$  values and the high  $\bar{V}$ -values for the oceanic plateau show a stable character (about 7 km/sec). Between the island arc and the deep trench however, there are also extensive low-water areas. When comparing the bathymetric data referring to this area and the structure of the crust it can be established that the low-water areas of the Pacific at the northern and southern regions of the arc correspond to the continental type of the crust, whereas the deep-water areas of the central part of the island arc correspond to the intermediate type of the Earth's crust. The same regularity is also observed for the western coast of the island arc. Gravimetric data show that in regions of the continental type crust structure the anomalies of the gravity force display low values as compared with those registered for the ocean, while in the zones of intermediate crust structure the anomalies also have medium values between oceanic and continental anomalies. The boundaries between the zones of various  $\Delta g$  values correspond roughly to the boundaries between the zones of various crust-

Card 3/4

Some results of studying the Earth's crust ...

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structures. The most intense volcanic activity for the past 200 years was recorded for the central part of the arc, with an intermediate crust-structure, while the highest seismic activity was observed in areas with a continental type structure of the core. In the Kuril arc remarkable and intensive recent movements have been observed, according to which the area can again be divided into three parts: in the northern and southern parts a remarkable up-lift is established, whereas the central part - bordered by the Bussol' and Kruzenshtern straits has subsided. There are 4 figures and 9 Soviet-bloc references.

ASSOCIATION: Institut fiziki Zemli AN SSSR, Moskva (Institute of Geophysics, AN USSR, Moscow)

Card 4/4

NIKISHIN, V.S.; VEYTSMAN, R.I., otv. red.; ORLOVA, I.A., red.

[Stressed state of a symmetrically loaded elastic circular  
cylinder] Napriazhennoe sostoianie simmetrichno nagruzhennogo  
uprugogo krugovogo tsilindra. Moskva, Vychislitel'nyi  
tsentr AN SSSR, 1965. 193 p. (MIRA 18:12)



BUTYRSKIY, G.G., inzhener; VEYTSMAN, R.I., inzhener.

Characteristics of damper lashing wire action in case of  
tangential vibrations of moving blade sections of the turbines.  
Energomashinostroenie no.8:11-13 Ag '56. (MLRA 9:10)

(Steam turbines)

VEYTSMAN, R. I.

20

PHASE I BOOK EXPLOITATION

SOV/6086

- Nauchnoye soveshchaniye po teplovym napryazheniyam v elementakh turbomashin. 2d, Kiyev, 1961.

Teplovyie napryazheniya v elementakh turbomashin; doklady nauchnogo soveshchaniya., vyp. 2 (Thermal Stresses in Turbomachine Parts; Reports of the Scientific Conference, no. 2). Kiyev, Izd-vo AN UkrSSR, 1962. 174 p. 1800 copies printed.

Sponsoring Agency: Akademiya nauk Ukrainskoy SSR. Institut mekhaniki.

Resp. Ed.: A. D. Kovalenko, Academician, Academy of Sciences UkrSSR; Ed.: T. K. Remennik; Tech. Ed.: A. M. Lisovets.

PURPOSE: This collection of articles is intended for scientific workers and turbine designers.

Card 1/6

Thermal Stresses (Cont.)

SOV/6086

COVERAGE: The book contains 18 articles dealing with investigations connected with thermal stresses in turbine components. Individual articles discuss thermoelasticity, thermoplasticity, thermal conductivity, and temperature fields. No personalities are mentioned. References accompany 17 articles. The conference recommended broadening the theoretical and experimental investigations of aerothermoelastic and aerothermoplastic problems, the development of investigations of general problems of the theory of thermoelasticity and thermoplasticity based on the thermodynamic principles of reversible and nonreversible processes, the development of effective calculation methods for thermal stresses taking into account plastic deformations and creep in thin- and thick-walled structural members under stationary and nonstationary operating conditions, the development of experimental-research methods for thermometry and tensiometry in connection with modern operational conditions of mechanical structures, and the broadening of investigations of problems in the thermostrength of structures, especially of those operating under conditions of frequent and sharp temperature changes.

Card 2/6

Thermal Stresses (Cont.)

SOV/6086

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Grigorenko, Ya. M., and L. A. Il'in [Kiyev]. Complex Equations of the Theory of Thin Shells With Temperature Influences Taken Into Account	27
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Card 3/8

VEYTSMAN, R.I. (Leningrad)

Thermal stresses near the welded joint of dissimilar pipes.  
Prykl. mekh. 10 no.4:392-398 '64. (MIRA 17:10)

**"APPROVED FOR RELEASE: 09/01/2001**

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VEYTSMAN, R. M.

21 October 7



AUTHORS: Shcherbakov, V. G., Veytsman, R. M. 32-3-10/52

TITLE: The Decomposition and the Analysis of Chromium Oxide  
(Razlozheniye i analiz okisi khroma)

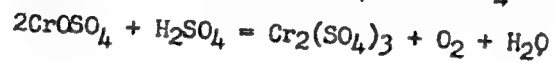
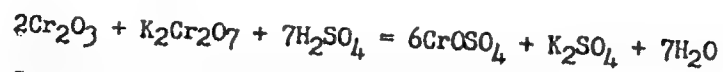
PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol. 24, nr 3, pp. 280-281 (USSR)

ABSTRACT: As  $\text{Cr}_2\text{O}_3$  is insoluble in concentrated acids and lyes, and as, besides, it is not easily decomposed, a new method of decomposition was worked out. Decomposition is carried out by means of sulphuric acid and potassium dichromate by means of heating and is oxidized with an alkaline hydrogen peroxide solution. The solution is then titrated with a Mohr-salt solution in the presence of ortho-phosphoric acid and Na- or Ba-diphenylaminosulfonate (as indicator), in which case the titer of the Mohr-salt solution must always be controlled. From tables containing results determined by this or by other methods it may be seen that agreement is good. It was established experimentally that complete and rapid oxidation is attained by means of a 0.5n alkaline solution containing 0.5-0.6% hydrogen peroxide. The reaction of decomposition takes place as follows:

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The Decomposition and the Analysis of Chromium Oxide

32-3-10/52



There are 2 tables, and 2 references, 1 of which is Slavic.

ASSOCIATION: All-Union Scientific Research Institute for Hard Alloys  
(Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov)

AVAILABLE: Library of Congress

1. Chromium oxide-Analysis
2. Chromium oxide-Decomposition

Card 2/2

SOV/32-25-4-9/71

5(2)

AUTHOR:

Veytsman, R. M.

TITLE:

Photocolorimetric Determination of Titanium in Form of a Phosphorus-molybdenum-titanium Complex Compound (Fotokolorimetri-cheskoye opredeleniye titana v vide fosfornomolibdenotitanovogo kompleksa)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pp 408-411 (USSR)

ABSTRACT:

It was found that titanium forms a complex heteropolyacid with phosphomolybdate and phosphowolframate. This yellow-colored phosphorus-molybdenum-titanium complex compound (I) can be reduced with  $\text{SnCl}_2$  to the characteristic blue coloring. In the preparation of the stable form of (I), a pH = 3-5 must be maintained. As in a solution of (I) the coloring of the phosphomolybdate (II) takes effect, it must be eliminated in order to be able to determine the quantity of titanium by a colorimetry of (I). By an acidification (II) decomposes faster than (I) so that by the action of sulphuric acid, (II) is completely destroyed after a certain time, and only the coloring of (I) remains. According to the principle of this method, the latter can then be reduced with  $\text{SnCl}_2$  to the blue coloring, and can be

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SOV/32-25-4-9/71

Photocolorimetric Determination of Titanium in Form of a Phosphorus-molybdenum-titanium Complex Compound

measured colorimetrically. The method was worked out for titanium determinations in solid solutions, composed carbides, and carbide mixtures. Comparison tests showed that under the given conditions the influence of wolfram is eliminated by an excess of phosphate while cobalt does not disturb the determination. For titanium determinations in the presence of wolfram and cobalt, a special kind of dissolving the carbides was used by oxidizing them with hydrogen peroxide in the sulphuric-acid medium. Analytic results for a standard solution (Table 1) as well as comparison results between the volumetric and the described colorimetric titanium determinations in carbide samples (with type designations, Table 2), as well as a course of analysis for titanium determinations without admixtures on one hand, and in carbides on the other, are given. The sensitivity of the method is indicated with  $7 \cdot 10^{-4}$  g Ti/200 ml solution. There are 2 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov  
Card 2/2 (All-Union Scientific Research Institute of Hard Alloys)

5(2)

AUTHOR:

Veytsman, R. M.

SOV/32-25-5-9/56

TITLE:

Photocolorimetric Determination of Niobium in Carbide Mixtures (Fotokolorimetriceskoye opredeleniye niobiya v karbidnykh smesnyakh)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, pp 552-554 (USSR)

ABSTRACT:

A method was devised, which allows a niobium determination in the presence of all components of a complex carbide. The method is based on the formation of a colored complex compound - phosphorus molybdenum niobium heteropoly acid (Refs 2 - 4). It was found that even larger amounts of tantalum do not disturb the determination, tungsten is transferred into a complex compound with a phosphate excess, while the disturbing effect of titanium is eliminated with Trilon B (with an acid concentration 0.7 - 0.8 n). Boric acid prevents molybdenic acid from precipitating, while an influence of the excess molybdenum reagent as well as of the phosphorus molybdic acid formed is eliminated by an increase in the acid concentration to 3 - 3.5 n during reduction. The solution of the reduced complex compound obeys in the wide concentration range to Beer's law, and is measured by photocolorimetry.

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Photocolorimetric Determination of Niobium in Carbide Mixtures

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The sensitiveness of determination is mentioned as being 0.1  $\mu$ /1 ml solution, allowing for a relative error up to 10 %. Analytical results are given concerning artificially prepared samples (Table 1), samples with carbide mixtures (Table 2). Also a comparison is established between analytical results obtained according to the gravimetric niobium determination (with "pyrrogallol") and the photocolorimetric method described (Table 3). A course of analysis is also described. There are 3 tables and 7 Soviet references.

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Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (All-Union Scientific Research Institute of Hard Alloys)

Card 2/2

S/081/62/000/002/035/107  
B151/B108

AUTHORS: Shcherbakov, V. G., Veytsman, R. M.

TITLE: Determination of sulfur in metallic tungsten, molybdenum and the anhydrides of tungstic and molybdic acids

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1962, 153-154, abstract 2D109 (Sb. tr. Vses. n.-i. in-t tverdykh splavov, no. 3, 1960, 23-30)

TEXT: An iodometric method has been developed for the determination of S in the presence of Mo or W, based on its reduction to  $H_2S$  in a medium composed of  $H_3PO_4$ ,  $SnCl_2$ , KI, and  $NaH_2PO_2$  in a stream of  $CO_2$  and absorption of the  $H_2S$  evolved in a solution of  $Cd(CH_3COO)_2$ . 5 g of metallic W or Mo are filled into a platinum crucible and 5-7 ml of concentrated HF added. Concentrated  $HNO_3$  is added dropwise until the frothing ceases and then a further 5 ml of  $HNO_3$  is added. The mixture is then evaporated to dryness on a water bath. To the residue 5 ml of water are added and the mixture

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S/081/62/000/002/035/07  
B151/B108

Determination of sulfur in...

again is evaporated and dried in an oven at 130° for 15-20 minutes. The apparatus for the reduction, consisting of a reaction flask fitted with a vertical condenser, connected via a small cup-seal with a funnel, is washed twice with water and then with ethanol. Through the funnel 5 g  $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$  are filled into the flask and then the dried residue, 5 ml of ethanol are added and the whole is mixed for 6-7 min. Then 2 g of tin are introduced into the flask and a mixture of 5 g KI with 2 g  $\text{NaH}_2\text{PO}_2$  (sp. gr. 1.65) are introduced through the funnel. The seal is filled with ethanol and the apparatus is connected with a receiving flask (RF), containing 50 ml of a 2.5 % solution of  $\text{Cd}(\text{CH}_3\text{COO})_2$  and 75 ml water. after which there is a second (RF) containing 30 ml of 2.5 %  $\text{Cd}(\text{CH}_3\text{COO})_2$  solution and 50 ml water. The reaction flask is heated and  $\text{CO}_2$  purified by passing through a 10 %  $\text{SnCl}_2 \cdot 2\text{H}_2\text{O}$  solution and a 5 %  $\text{CuSO}_4$  is passed through the flask at a rate of 60-80 bubbles a minute. The  $\text{H}_2\text{S}$  formed is

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Determination of sulfur in...

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B151/B108

distilled off for 2 hours. The solutions from both RF's are mixed together, 10-15 ml of 0.005 N  $I_2$  and 10 ml HCl (1:1) added, and the whole is agitated (in the closed flask) until the CdS precipitate is dissolved. It is then left in the dark for 15 min, with periodic agitation. The saturated solution is then neutralized with congo paper with a solution of trisubstituted K citrate or Na acetate and titrated with 0.003 N  $Na_2S_2O_3$  using starch as the indicator. The error of determination is about  $3 \cdot 10^{-4}$  g S. [Abstracter's note: Complete translation.]

✓

Card 3/3

S/032/60/026/008/014/046/XX  
B020/B052

AUTHOR: Veytsman, R. M.

TITLE: Photocolorimetric Determination of Zirconium in a Phosphomolybdenum-zirconium Complex

PERIODICAL: Zavodskaya laboratoriya, 1960, Vol. 26, No. 8, pp. 927-929

TEXT: According to Ref. 1 titanium, like vanadium and niobium, phosphorus and molybdate form a phosphomolybdic-titanium-triheteropolyacid which is the basis for the photocolorimetric determination of titanium. The author examined whether the analogous zirconium complex can be used for analytic purposes. The phosphomolybdenum-zirconium complex is reduced to blue coloration by tin chloride. Its color intensity mainly depends on the quantitative formation of the yellow complex which is formed by  $H_2SO_4$  or  $CH_3COOH$  at pH 3, and with a phosphate concentration (converted to the secondary ammonium orthophosphate) in the order of magnitude of 0.004 mole. A phosphate excess delays the formation of phosphomolybdic-zirconium-

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Photocolorimetric Determination of Zirconium  
in a Phosphomolybdenum-zirconium Complex

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B020/B052

triheteropolyacid. A reduction of the phosphate concentration to less than 0.003 mole supports the formation of phosphomolybdic acid which is stopped at  $\text{pH} \leq 3$ . Fig. 1 gives the effect of the ammonium phosphate concentration on the intensity of the yellow color in the complex. The excess of ammonium molybdate added shall not exceed  $5 \times 10^{-3}$  mole. A reduction in the acidity proportionally increases the intensity of the blue color. However, this does not hold for acid concentrations below 1 N (Fig. 2). Zirconium may be present in the form of  $\text{Zr}^{4+}$  or as a zirconium oxycation. Excesses of fluorides, phosphates, organic hydroxy acids, and the complexon, affect the complex formation. The yellow solutions follow Beer's law in wide concentration ranges. An optimum reduction takes place with  $\text{SnCl}_2$  in 2 N  $\text{H}_2\text{SO}_4$  in the presence of the complexon, the latter being introduced into the solution for increasing the optical density of the blue color which under equal conditions increases proportionally to the amount of the complexon (Fig. 3). Calcium citrate is added to prevent hydrolysis. The coloration is measured by the colorimeter type ФЭК-M (FEK-M) with red light filter at a layer thickness of 20 mm. High concentrations of W, Co,

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Photocolorimetric Determination of Zirconium  
in a Phosphomolybdenum-zirconium Complex

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Nb, Ta, and Fe in a five-fold excess as compared to the Zr amount, do not interfere, nor does any amount of Ta and Nb if  $Zr : Nb > 10 : 1$ . With a ratio of  $Zr : Nb < 5 : 1$ , the results deviate by more than plus 10%. The presence of titanium also increases the results. The dependence of the optical density of the blue solutions on the zirconium concentration in the range of 20 to 500  $\mu$ g of Zr/100 ml normally is linear to the reduced solution. Table 1 shows the results of the photocolorimetric determination of zirconium in typical solutions, and Table 2 gives the results of the determination of zirconium by the gravimetric and photocolorimetric method. The analysis is described in detail. There are 3 figures, 2 tables, and 4 Soviet references. ✓

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tverdykh splavov (All-Union Scientific Research Institute of Hard Alloys)

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